

Claims

1. A frame for use in loading groups of battery plates into respective cells in a box, comprising a plurality of spaced walls defining respective group receiving spaces, the walls being moveable away from and towards each other to allow groups to be inserted in the spaces and subsequently grippingly retained therein and compressed by the walls, and guide means mounted at the lower end of the walls to locate in the cells and form a continuous surface with the walls characterised in that guide means extend across the full width of the walls, cells or groups, and in that the groups may be loaded from the frame whilst still under compression.

2. A frame as claimed in claim 1 further comprising stop means for each space insertable between a respective pair of walls into the respective space to locate the bottom edge of a group when it is placed into the space.

3. A frame for use in loading battery plates into respective cells in a box, comprising a plurality of spaced walls defining group receiving spaces, the walls being movable away from and towards each other to allow groups to be inserted into the spaces and subsequently grippingly retained therein by the walls characterised in that it further comprises removable stop means for each space insertable between a respective pair of walls into the respective space to locate the bottom edge of a group when it is placed into the space.

4. A frame as claimed in claim 2 or claim 3 wherein the

Art. 34

12 a

~~stop means locate the group against downward movement and~~

09180579.111298

AMENDED

lateral movement relative to the mid-plane of the group.

5. A frame as claimed in any one of claims 2 to 4 wherein the stops means are removable from the spaces.

6. A frame as claimed in any one of claims 2 to 5 wherein the stop means provide orthogonal abutments and are rotatable about an axis adjacent to the intersection of the abutments.

7. A frame as claimed in any one of claims 2 to 6 wherein the stops means are moveable with or in relation to the walls.

8. A frame as claimed in any one of the preceding claims wherein the distance between the group bottom edge location defined by the stop means and the top of its associated walls is greater than the total height of the groups.

9. Battery group loading apparatus including a frame as claimed in any one of claims 2 to 8 and further comprising means for loading the groups into respective spaces in the frame to sit on the respective stop means, means for moving the walls towards each other to grip the groups between the walls, means for removing the stop means from the spaces, means for engaging a battery box with the guide means and means for pushing the groups through the guide means into the box.

10. Apparatus as claimed in claim 9 wherein the means for moving the walls towards each other are further for exerting compressive forces on the groups.

11. Apparatus as claimed in claim 9 or 10 wherein the

0018057-4499
662777 62508760

pushing means acts simultaneously on all the groups.

12. A method of unloading a battery group from a jig box including engaging the bottom of group on a support, releasing the grip of the jig box on the groups, raising the support and hence the group until a substantial portion of the group is clear of the jig box and gripping the raised group.

13. Apparatus for unloading a battery group from a jig box including support means for engaging the bottom of a group on a support, whilst the group is held in a jig box, means for releasing the groups within the jig box, means for raising the support to a level at which a substantial of a supported group would stand clear of the jig box and means for gripping the raised groups.

14. Apparatus as claimed in claim 13 wherein the support includes lateral abutments for preventing sideways movements of the groups during raising.

15. Apparatus for unloading groups with cast-on-straps from a jig box and for loading those groups into a battery box including apparatus for unloading as claimed in claim 13 or claim 14 and battery group loading apparatus as claimed in any one of claims 9 to 12.

0013059.4490
662116250860

ADD
M